Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-2. (cancelled)

3. (previously amended) A process for the removal of DOC from water containing DOC, said process comprising:

(i) contacting the water with ion-exchange resin to enable adsorption of DOC on the resin;

(ii) separating the resin loaded with DOC from the water;

(iii) regenerating at least a portion of the separated resin by contacting it with a concentrated inorganic salt solution containing a source of anions such that the anions exchange with DOC adsorbed on the resin;

(iv) separating the regenerated resin from the concentrated salt solution containing DOC;

(v) contacting the solution from step (iv) with a coagulant and/or flocculant such that the DOC becomes insoluble in the salt solution; and

(vi) removing the insoluble DOC of step (v) from the salt solution.

4. (previously amended) A process according to claim 3 wherein the ion exchange resin has a density greater than the water and the resin loaded with DOC is separated from the water by settling.

5. (original) A process according to claim 4 wherein the resin is collected by vacuum collection.

6. (previously amended) A process according to claim 3 wherein the regenerated resin is separated from the concentrated salt solution containing DOC by filtering through a mesh.

7. (previously amended) A process for the removal of DOC from water containing DOC, said process comprising:

(i) contacting the water with ion-exchange resin to enable adsorption of DOC on the resin;

(ii) separating the resin loaded with DOC from the water;

(iii) regenerating at least a portion of the separated resin and recycling the remainder to step (i), wherein the resin is regenerated by contacting it with a concentrated inorganic salt solution containing a source of anions such that the anions exchange with the DOC adsorbed on the resin;

(iv) separating the regenerated resin from the concentrated inorganic salt solution containing DOC;

(v) recycling the regenerated resin back to step (i);

(vi) contacting the separated inorganic salt solution from step (iv) with a coagulant and/or flocculant such that the DOC becomes insoluble in the salt solution;

(vii) removing insoluble DOC from the salt solution to regenerate concentrated inorganic salt solution; and

(viii) recycling concentrated inorganic salt solution back to step (iii).

8. (previously amended) A process according to claim 3 which is used in the treatment of a raw water source to produce potable water for distribution and consumption.

9. (original) A process according to claim 7 wherein the regenerated salt solution obtained from step (vii) is treated with a base.

10. (original) A process according to claim 7 wherein the regenerated concentrated salt solution is obtained from step (vii) has a pH of 7-11.

11. (previously amended) A process according to claim 3 wherein the ion-exchange resin is magnetic ion-exchange resin.

12. (original) A process according to claim 11 wherein the magnetic ion-exchange is MIEX® resin.

13. (previously amended) A process according to claim 3 wherein the coagulant/flocculant is selected from aluminium sulphate (alum), polyaluminum chloride, aluminium chlorohydrate, polyaluminium chlorohydrate, ferric chloride, ferric sulphate, polymerised ferric sulphate, polyDADMACS, polyacrylamide emulsion polymers, coagulant aids, and filter aids.

14. (previously amended) A process according to claim 13 wherein the coagulant/flocculant is selected from Ferric Chloride, Ferric Sulphate, polymerised Ferric sulphate and Aluminium sulphate (Alum).

15. (previously amended) A process according to claim 3 wherein the concentrated salt solution is a concentrated inorganic salt solution selected from NaCl, KCl, NH_4Cl, $CaCl_2$ and $MgCl_2$ or mixtures thereof.

16. (original) A process according to claim 15 wherein the concentrated salt solution is a brine solution.

17. (previously amended) A process according to claim 15 wherein the salt solution has a concentration of greater than 1.5M, or 100 grams of total dissolved salt in a mixture of salts per litre of water.

18. (previously amended) A process according to claim 3 wherein the step of contacting the salt solution with a coagulant and/or flocculant is conducted under acidic conditions.

19. (original) A process according to claim 18 wherein the pH is less than 3.

20. (previously amended) A process according claim 3 wherein the step of contacting the salt solution with a coagulant and/or flocculant further includes the addition of an acid.

21. (original) A process according to claim 20 wherein the acid is selected from HCl, HNO_3 and H_2SO_4.

22. (original) A process according to claim 21 wherein the acid is HCl.

23. (previously amended) A process according to claim 20 wherein the pH is about 2.

24. (previously amended) A process according to claim 3 wherein the insoluble DOC is removed from the salt solution by filtration.

25. (original) A process according to claim 24 wherein the filtration method is a plate and frame filter process.

26. (previously amended) A process according to claim 3 wherein the DOC which is removed from the salt solution is used as a fertilizer, feed-stock, soil conditioner, or health supplement.

27. (previously amended) A process according to claim 3 wherein the DOC which is removed from the salt solution is used as land fill.

28. (cancelled)